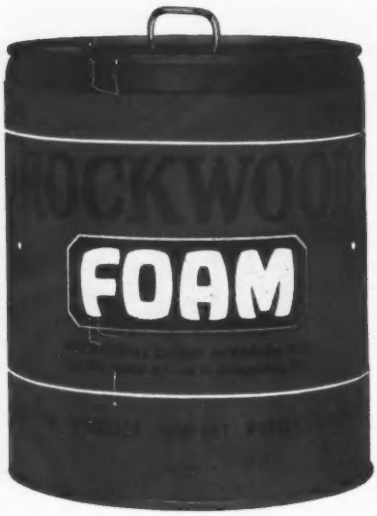
SEPTEMBER 1949

FIREMEN

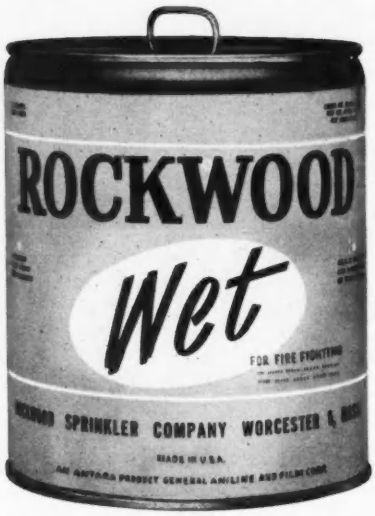
FIFTY-FOURTH YEAR • NATIONAL FIRE PROTECTION ASSOCIATION

CUT YOUR Fire Fighting COST WITH ROCKWOOD'S MODERN CHEMICALS



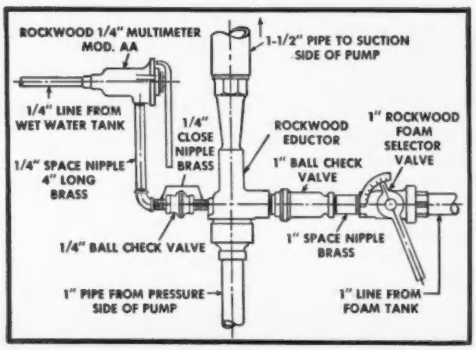
Use Rockwood Foam Liquid to fight fires in gasoline and in other similar flammable liquids. It is a low expansion, protein base foam liquid. By mixing six parts of Rockwood Foam Liquid with ninety-four parts of water, you will create an excellent foam blanket with real stability and fire extinguishing qualities. To put out fires faster and more economically use Rockwood Foam Liquid with the new Type FFF Rockwood Fog-FOAM Nozzle.

FFF Fog FOAM NOZZLE



Rockwood "Wet" speeds the spread and penetration of water into deep seated fires involving ordinary combustibles such as wood, paper, cloth, etc. Use one part Rockwood "Wet" with ninety-nine parts of water to reduce the time, man power and quantity of water needed to put out fires. Rockwood "Wet" is less corrosive than water.

New Rockwood Model B Automatic Proportioner for your fire trucks — pays for itself by automatically feeding foam liquid or wetting agent into hose lines. Eliminates waste.


ROCKWOOD 1/4" MULTIMETER MOD. AA
1-1/2" PIPE TO SUCTION SIDE OF PUMP
1/4" LINE FROM WET WATER TANK
1/4" CLOSE NIPPLE BRASS
ROCKWOOD EDUCTOR
1" ROCKWOOD FOAM SELECTOR VALVE
1/4" SPACE NIPPLE 4" LONG BRASS
1" BALL CHECK VALVE
1/4" BALL CHECK VALVE
1" SPACE NIPPLE BRASS
1" PIPE FROM PRESSURE SIDE OF PUMP
1" LINE FROM FOAM TANK

ROCKWOOD SPRINKLER COMPANY

88 HARLOW STREET WORCESTER 5, MASSACHUSETTS

Specialists in Fire Protection Engineering, Equipment and Installation since 1907

Millionaire buys third High-Pressure Fog Fire Fighter from John BEAN

WHEN CY HYDE, Boston millionaire, needed another fire engine to protect his 2000-acre estate and other property in the county, he chose a new Super Model John Bean High-Pressure Fog Fire Fighter. Having purchased two other Bean Fog Fire Fighters, Hyde knew they were the finest money could buy.

Bean will solve your protection problems, too. For all-around coverage—city, rural, airports, industrial, institutional—Bean leads with modern fire fighting equipment.

Because they carry their own water supply, Bean Fog Fire Fighters go into action immediately. Bean High-Pressure Fog smothers flames quickly, reduces water damage and makes entry into buildings safer.

Write today for complete information on John Bean High-Pressure Fog fire fighting and equipment.

CY HYDE, owner of the Touraine Hotel, Boston, recently purchased this Super Model John Bean High-Pressure Fog Fire Fighter to protect his New Hampshire estate. 600 gal. tank—60 G.P.M. at 850 lbs. pressure—2 hose lines, each 250 ft.—8-ton International chassis.

BEAN *Original* **HIGH-PRESSURE FOG FIRE FIGHTER**

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY CORPORATION

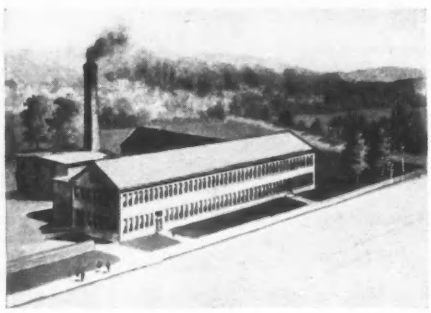
JOHN BEAN DIVISION, DEPT. 127, LANSING 4, MICH. • BEAN-CUTLER DIVISION, 426 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS

LET'S LOOK AT THE RECORD...

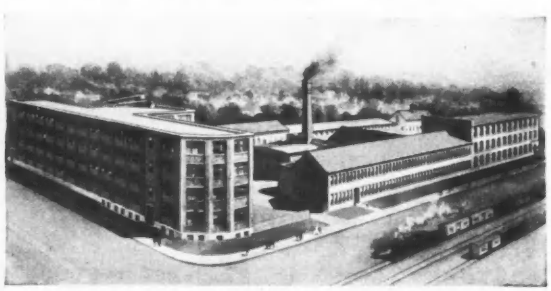
GROWTH OF THE INDUSTRY

THE FIRST FACTORY
NEWTON HIGHLANDS, MASS. 1866—1885



Larger quarters became necessary and Gamewell moved into this plant capable of accommodating about 100 workmen.
NEWTON UPPER FALLS, MASS.1885—1904

The business continued to grow, and the plant was enlarged.
NEWTON UPPER FALLS, MASS.1904—1913



For protecting its own interests and those of its customers against fire, the highly fire resistive building at the left was erected in 1913, and has since housed Gamewell's manufacturing operations.
NEWTON UPPER FALLS, MASS. 1913—1949

TRADE MARK
GAMEWELL
REG U.S. PAT OFF

Manufacturer of

MUNICIPAL FIRE ALARM SYSTEMS

Founded in 1855 by John N. Gamewell who in that year acquired the basic patents covering the first successful application of Morse telegraph to Fire Signaling. The firm of John N. Gamewell & Company was organized in 1866, incorporated as The Gamewell Fire Alarm Telegraph Company in 1879, and the title changed in 1924 to — The Gamewell Company — which now presents the accumulated experience of 94 years in the development, manufacture and installation of a highly specialized product.

World-Wide Recognition

Gamewell systems are now employed in 90% of the cities in the U.S.A., Canada, and Africa having public fire alarm systems, by many cities and governmental establishments in 20 foreign countries and colonies.

Small Organization— High Quality Products

Despite the wide distribution of Gamewell systems, the company's volume of business has been small compared with many other industrials. Yet the high efficiency, reliability and great durability of its public fire alarm equipment produced by a small force of skilled workmen — never exceeding 300 persons — have caused intending buyers, almost invariably, to prefer the Gamewell System.

Expression of Appreciation

The Gamewell Company deeply appreciates the widespread confidence in its products and will continue to incorporate therein the features dictated by nearly 100 years' experience as being essential for the adequate protection of life and property.

We invite your inquiry.

THE GAMEWELL COMPANY

Newton Upper Falls 64, Massachusetts

Firemen

Volume 16 Number 9

WARREN Y. KIMBALL, EDITOR
OWEN L. DELLA LUCCA, ASSOCIATE EDITOR
CHARLES S. MORGAN, ADVERTISING MANAGER

Published monthly for the fire service members of the
NATIONAL FIRE PROTECTION ASSOCIATION
A VOLUNTARY NON-PROFIT ORGANIZATION
60 BATTERYMARCH ST., BOSTON 10, MASS.

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HORATIO BOND, CHIEF ENGINEER

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The cover photo (International) shows a conflagration at the Oak Island section of Revere, Massachusetts, on July 4. The fire occurred on a holiday afternoon when the temperature was at 98° F. and followed 40 rainless days. The greatest crowd in many years was at Revere Beach when fire started at the rear of a frame cottage from an undetermined cause, but possibly due to an unattended rubbish fire.

The flames destroyed seven single cottages and five three story apartment houses within 45 minutes, and burned over an area 250 ft. long and 100 ft. deep. Only one building was of brick-joisted construction, the others being of flimsy wooden construction — several without masonry foundations. Fire Chief Thomas J. McCarrick of Revere reports that 8 engine and 3 ladder companies were in service, and twelve 2½-in. lines, five 1½-in. lines and an aerial ladder pipe were employed. The Revere Department was assisted by companies from Winthrop, Everett, Malden, Lynn, Chelsea and Boston. All local fire stations were covered by outside apparatus during the progress of the fire and ample manpower was obtained through the assistance of U. S. Navy personnel.

Because of intense heat waves and rapid progress of the fire, strategic points had to be selected to prevent further spread of the flames. Exposures to the east and west were not serious so that most lines were concentrated to the north and south where, fortunately, the fire was controlled. Five firemen and two sailors were hospitalized due to burns and smoke inhalation. The water supply was from a 10-in. main supplied through a 20-in. main.

Chief McCarrick points out that through long experience with this type of resort fire, the remedy is apparent — "A building code that will prevent erection of flimsy frame structures and control the density of such structures." With the exception of four buildings, the burned structures were erected many years ago, probably before building laws were in force.

IAFC PLANS CONFERENCE

The 76th Annual Conference of the International Association of Fire Chiefs is scheduled for New Orleans, La., September 26–29, 1949. The chiefs are to meet in the New Orleans Municipal Auditorium under the direction of President Henry R. Chase of the Miami Fire Department. The first three days of the Conference will be largely devoted to technical programs of interest to the fire chiefs. Fifteen topics on the program include: Protection of High Value Areas; Cotton Fires; Large Pumpers; First Aid Programs; Airport Fires; Financial Aid to Fire Departments; New Fire Alarm Regulations; Tire Storage Fires; Hazards of Plastic Christmas Tree Ornaments; and Instructing Fire Forces for Atomic Warfare. There will also be a round table discussion of several additional fire department problems. An entertainment and dance will be held at the Hotel Roosevelt on September 27 and a banquet at the Hotel Roosevelt on September 28. In addition, there will be a boat ride around New Orleans Harbor.

Under the leadership of Chief Henry Chase of Miami and General Manager James E. "Ed" Jagger, the IAFC has enjoyed a membership increase of 12½ percent in the twelve-month period ending June 30. IAFC General Manager Jagger wishes to call attention to the fact that any person interested may become an associate member of the IAFC and receive their publications. Membership is handled through several regional fire chiefs organizations but any chief or fireman interested may write to the IAFC headquarters office at 22 East 38th Street, New York 16. The Association has a number of publications on fire subjects for sale. A list of these may be obtained from the IAFC office. They also appear in "A Reference List for Firemen's Training" published by the NFPA.

Make Use of Radio Allocations

As mentioned in FIREMEN magazine last month, the U. S. fire service has been granted extremely valuable and useful radio frequency allocations by F.C.C. These allocations are believed ample to permit all fire departments to enjoy the finest emergency radio communications on wave lengths suitable for their location and terrain. However, there is the danger that unless the fire service makes use of these allocations, other public services that want to extend their radio facilities may succeed in having these allocations taken from the fire service and put to other use.

It is almost inconceivable that a fire department can operate efficiently without two-way radio on every officers' car and every piece of first-line fire company apparatus. Fire departments represent investments of thousands of dollars worth of equipment and trained personnel. Unless each unit is radio equipped, this equipment is lost to the dispatcher the moment it leaves its station. Where fire departments have radio, the first piece arriving at a false or trivial alarm can report the nature of the call and all other units can resume their normal assignments "on the air." Where careful cost figures have been maintained, the radio has completely paid for itself time and time again in reduced maintenance and operating costs, frequently within one year of installation. If a fire department budget does not permit installation of radio equipment on all apparatus at once, at least a beginning should be made toward complete radio equipment by installing one or more units each year.

Auburn, Maine, Has Fatal Crash

Engine 2 of Lewiston, Me., in foreground collides with Engine 2 of Auburn, Me.

AT 5:13 P.M. on July 7, 1949, the fire dispatcher of Lewiston, Maine, received a mutual aid call from the Auburn dispatcher to send a truck to the Auburn Central Fire Station to cover in during a second alarm. Engine 2 responded. Traffic from Auburn was relatively light as an Auburn police officer was directing traffic to clear the way for the Lewiston truck. As Lewiston Engine 2 approached, an Auburn fire truck also approached the intersection at Main and Court Streets from a side street. The Lewiston truck being closer, the police officer gave it the go-ahead signal, and motioned the Auburn truck to slow down. The Auburn driver, unaware of the other truck, signaled that he was going straight through and continued to do so. As the trucks collided and overturned, firemen were thrown in the air, hose and equipment being strewn over the street. The outcome of the crash was that the police officer directing the traffic was instantly killed and two of the Lewiston firemen died several hours later, one from being catapulted into a wall and the other being caught between the truck and a parked car which was demolished. The occupant of this car was critically injured, as were several other firemen. Both trucks were a total loss.

In reporting this tragic occurrence to FIREMEN magazine, Inspector Al Landry of the Lewiston Fire Department (member NFPA), stated that it was the hope of members of the fire departments involved that knowledge of this accident might be used to prevent similar occurrences in the future. While apparatus responding to first alarms normally follow more or less prescribed routes, there is special danger when responding to additional or multiple alarms because various fire companies may be moving outside of their normal districts on special assignments, unknown to the drivers of other pieces. Apparatus of covering companies, in particular, should be on the lookout for companies that may be responding to multiple alarms; also fire apparatus drivers must be careful to heed the signals from police officers or even from citizens who may be in a position to observe traffic at an intersection. Some of the worst apparatus crashes on record have occurred where fire companies have been responding to different calls with drivers unaware that other companies were likely to cross their path. Often drivers are so deafened by their own sirens that they fail to heed signals from other vehicles. (See April 1949 FIREMEN, page 26).

Visalia, California, Erects Firemen's Memorial

FIREMEN on the Visalia, California, department, like members of the force in other communities, talked for years about erecting a memorial to their departed brethren. Within six months of starting a fund drive, the memorial was dedicated at a cost of only $1,200.

All deceased members of the old volunteer department, organized July 4, 1869, have their names inscribed on the stone, and volunteers or regulars departed since that date are also represented. Through the years names will be added as the men now on the force answer their last alarm.

In the fall of 1947, Chief Walter A. Wood decided to solicit a memorial fund. At the end of a week he had $600. The following week the city council appropriated $500 for the fund, and a later gift of $100 brought the total to $1,200.

With a bit of conniving, $1,200 can go a long way, Chief Wood discovered. He talked with the directors of the cemetery district and they agreed to free deed a 36 x 36 ft. corner plot to the department. City councilmen voted to have city crews construct a curbing around the rear boundries. Several nurseries agreed to donate shrubs for the borders and to supply plants for flower plots free of charge every spring. The only cash outlay, aside from the wholesale cost of the stone, was for laying the flagstone walk. Platoon members take turns caring for the plot.

The main portion of the monument is five feet six inches high and two and one-half feet wide. Width of the base, inscribed with names front and rear, is eight feet. A brass plaque of a fireman's helmet is mounted on both sides of the center stone.

At present there are 99 names on the monument, almost the limit; but that's no problem to Visalia's firemen. They plan to collect money for a granite bench to be placed near the monument and have a second muster roll.

"There's no reason why every community couldn't have a similar monument at little cost," says Chief Wood. "It's just a matter of expending a little time and effort, and there's a lot of satisfaction when the job is done."

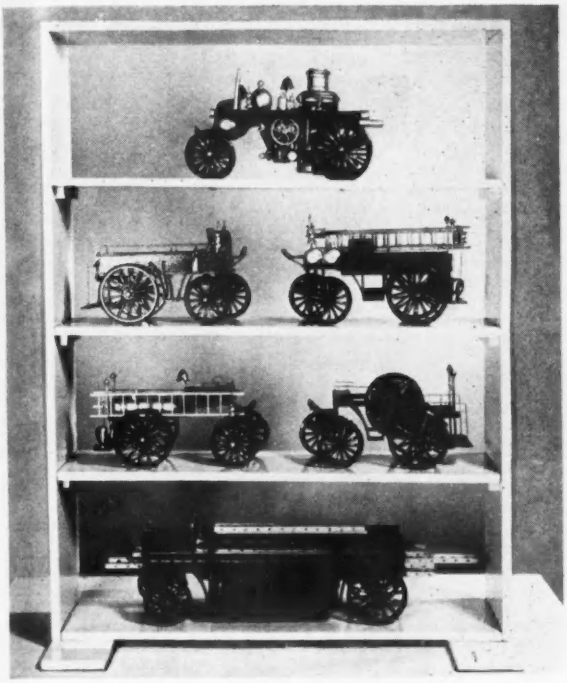
This firemen's memorial was erected by the Visalia, Calif., Fire Department at the cost of $1200, with the cemetery district free deeding the 36 ft. x 36 ft. plot and the local monument company supplying the stone at cost.

Hobby Turns to Profit

IF you figure a company's size by the number of units produced, the William H. Low Co. of Braintree, Mass., is probably the biggest manufacturer of fire apparatus in this or any other country. Bill Low filled orders in 1948 for over 25,000 fire engines. These pieces of apparatus were shipped all over the country in knock down form to be assembled after delivery. Of course they will never go to a fire, because they average only twelve inches long and are for the most part historical.

Every once in a while a man's hobby turns into a profitable business venture and the hobby of spark Bill Low has become a successful enterprise of interest to every fireman and all others who love to "follow the enjin's."

It seems that Bill Low is a spark from way back. His first small-boy interest in fire engines began 35 years ago when, at the age of 5, his father took him on a visit to Chicago fire

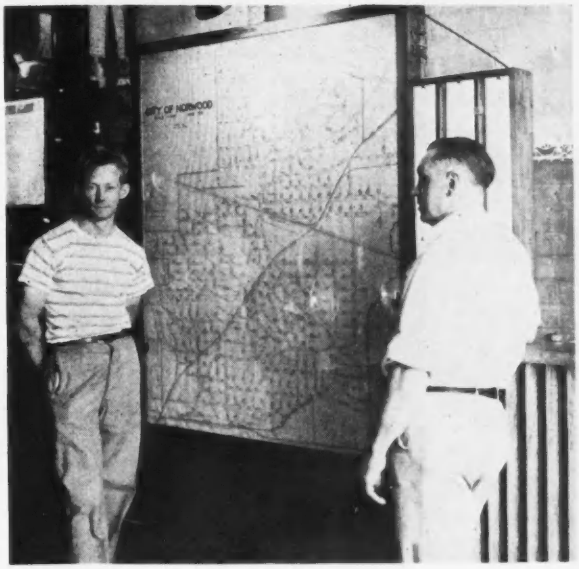


barns. Bill never realized his early ambition to become a fireman but he has found pleasure and profit making fire engine models and selling the "kits" and parts from Coast to Coast.

Like many another spark, Bill takes off every time there is an alarm in Braintree or a two- or three-bagger around Greater Boston, leaving his shop crew to make and pack parts and instructions for the 23 different models of old pumpers, hose and chemical wagons, ladder trucks, water towers and aerials. Every detail is accurate and authentic, taken from old pictures, manufacturers drawings, and examination of old equipment and then modified so that a model enthusiast can build a museum piece, or a ten-year-old can turn out a creditable job.

High Pressure Pumper Delivered to West Windsor, N. Y., Fire Department

The West Windsor (New York) Fire Company, Inc., recently acquired this new triple combination fire apparatus which will deliver 500 gpm at 120 lbs. pressure and 125 gpm. at 700 lbs. pressure. Using a Ford Chassis, the truck carries a Hale 500 gpm pump, a 500 gallon water tank, and reels carrying 200 ft. of high pressure hose, equipped with Hardie fog guns. It also carries two 15 lb. CO_2 extinguishers, a 2½-gallon foam extinguisher, aluminum ladders, pike poles, axe and other miscellaneous equipment. Delivery was made by Chief Ernest S. Youngs of the Port Crane Fire Department, representative of the Sanford Fire Equipment Corporation of Syracuse.

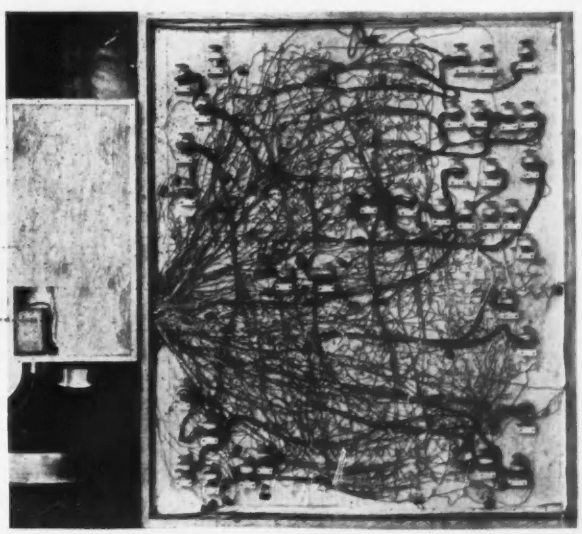


Electric Fire Finder

A NOVEL fire finder has been devised and installed in the Norwood, Ohio, No. 1 fire house. The device is an electrically lighted relay system that automatically designates the exact location of a fire by flashing a light when an alarm is turned in from any part of the city. Within five seconds the map can designate the location of any factory, store or home listed on the map of this city of 35,000 population. The city includes a large number of manufacturing plants, numerous retail and other mercantile establishments.

The map was designed and perfected by Bert Reed (right), Superintendent of the Norwood Fire Alarm System. He was assisted by Harold Glaser (left), one of the firemen. The finder was made during spare and overtime periods. A great deal of the electrical work was done by Mr. Reed, while relays and metal parts were built in the fire department shop. The completed finder includes 3500 feet of wire, 35 hand-built relays, transformer, lights and a map of Norwood. The cost to the fire department was only $135. In event of a telephone alarm, the officer in charge sets a slide at the street and a slide at the building number, presses a button and a light appears on the map indicating the location.

Rear view of fire finder showing maze of wires



FIRE PREVENTION WEEK — OCTOBER 9-15

Community Poster. 12 x 16 in. $2.50 per 100, $17.50 per 1000.

also

Perforated Sticker. 1½ x 1⅛ in. 25c sheet of 50, discount for quantities.

Facts About Fire. Editorial fact sheet that can be used for house-to-house distribution. 8¼ x 11 in. $1.50 per 100, $10.00 per 1000.

Firerule. Slide rule which reveals fire causes, number, proper prevention. 3¾ x 8 in. 3c each. $3.00 per 100, $25.00 per 1000.

Town Plaster. For posting on store windows, billboards, vehicles. 3½ x 12. $1.00 per 100, $6.00 per 1000.

ALL FIRES ARE LOCAL

By MELVIN R. FREEMAN
Public Relations Manager, NFPA

NATIONAL fire statistics are impressive but to achieve their full significance to the individual they must be tied into local statistics and translated in terms of local comparison.

When needless fire reaches into the narrower confines of a community it affects all citizens. When a leading industry or store in your town is destroyed by fire that fire means a loss of business — of jobs — of taxes. Sometimes communities which depend on the support of a major industry never quite recover when that industry is removed by fire. When your home or a neighbor's home burns down that fire represents a loss to the community — a building loss — a tax loss — sometimes a loss of life.

If we are to do this job of fire prevention successfully, each citizen must be indoctrinated with his fire control responsibilities. Fire Prevention Week offers a perfect psychological time to educate the citizenry what fire can mean to *him* . . . *his* family . . . *his* job . . . and *his* town. You've got to put the "you" in fire prevention to make the fire prevention message "stick" . . . and this means talking to your neighbors in terms of local conditions and statistics.

Fire Prevention Week materials as developed by the National Fire Protection Association are the "tools" to help you do the educational job at the local level. Some of the 1949 materials are illustrated on this page. Very shortly your department will receive an order blank illustrating all of the 1949 pieces and their prices.

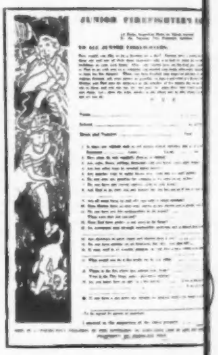
One joy in using any tool is to discover new uses and ways of adaptation. Therefore, in using the 1949 Fire Prevention Week materials the challenge is to properly integrate these aids into your local fire prevention program, so that the overall program takes on a *local* flavor.

Picture Book 16 pages of outline drawings of fire hazards for coloring by children. 5c each. $5.00 per 100, $45.00 per 1000.

Fire Safety Quiz Illustrated 4 page quiz, with correct answers. $2.00 per 100, $15.00 per 1000.

Fire Prevention Week Ha book. Plans for a succe campaign. 15c each.

Fire Hazard Card. Marker to call attention to fire hazards. 3½ x 5½ in. $1.50 per 100, $10.00 per 1000.



Home Inspection Blank, school children. 8½ x 1 $1.00 per 100, $7.50 1000.

Flyer. A colorful envelope stuffer. 5½ x 8½-in. $1.00 per 100, $7.00 per 1000.

Fire Foibles. Comic boo lustrating causes of 7½ x 10 in. 5c each, $ per 100, $45.00 per 10

Folders on various fire hazards. 6¼ x 3¼. $2.00 per 100, $ per 1000.

MAKING A GOOD JOB OF IT

BY WARREN Y. KIMBALL

Using Small Hose

AT rural fires it is not uncommon to employ fairly long lines of small hose. Even some city fire departments carry up to 500 ft. of ¾-in. line connected to their booster tanks for locations where height or arrangement of buildings makes long lines necessary. We have had several requests for data on pressures and performance of small hose. Accordingly, tables are presented on five types and sizes of small hose commonly found in fire department service. These include the ¾-in. and 1-in. "booster" hose, the 1⅛-in. and 1½-in. cotton-rubber-lined hose, and the 1½-in. unlined hose.

For many years the ¾-in. "chemical engine" or "booster" hose was standard size for hose from tanks carried on apparatus. This was generally used in connection with a ¼-in. nozzle tip although at rural fires a $\frac{3}{16}$-in. tip was commonly employed to conserve water and reduce pressure loss due to friction in long lines. However, as higher nozzle pressures came to be desired on small lines, particularly in connection with fog nozzles, the high friction loss in the ¾-in. hose became objectionable where departments carried 300 to 500 or more feet of hose in the small line basket or reel.

A number of cities have attempted to solve the problem by using 1-in. rubber covered booster hose. This hose has only one-quarter of the pressure loss of the ¾-in. hose at a given flow. There is a disadvantage, nevertheless, in that the 1-in. rubber hose is difficult to handle and the line almost ceases to be a one-man "quick line" which can be used while the balance of a fire company is getting a bigger line into operation.

One answer to the problem has been the employment of either 1-in. or 1⅛-in. cotton rubber lined hose for tank work. For example, the Los Angeles City Fire Department has placed 1-in. c.r.l. hose on a number of engine companies. Firemen like this hose because it is much easier to handle than the old booster hose, and as shown in the tables gives a much better performance than the ¾-in. hose. In addition, it is not unusual to supply 1½-in. hose from fire apparatus tanks which are large enough to meet the demand of this size of hose.

It may help to understand what various sizes of small hose will do if we think of the hose not alone in terms of its diameter but as a circle with a given area through which water can flow, as follows:

Nominal diameter in inches	Area of circle in inches
¾	.44179
1	.7854
1⅛	.9940
1½	1.7671

It will be seen that the ¾-in. hose has an area through which water can flow that is less than a ½ square inch. The 1-in. hose has an area of a little more than ¾ of a square inch. The 1½-in. hose has better than twice the area of the 1-in. hose and four times that of the ¾-in. hose. The ¾-in. hose contains only 5.30 cubic inches of water per ft. while the 1-in. hose holds 9.32 cu. in. of water per ft. There are 231 cu. in. per gallon. Thus 50 ft. of ¾-in. hose holds slightly over 1 gallon and 50 ft. of 1-in. holds 2 gallons.

Where fog nozzles are employed on small lines it is important to provide ample pump pressure to get 80 to 100 lb. fog at the nozzle. Much of the complaint heard about the performance of small fog nozzles has been almost entirely due to failure to provide satisfactory pressure. In general, the flows from fog nozzles may be smaller than the flows from solid streams from the same size of hose. This reduction in flow reduces the friction loss in the hose and helps to provide a satisfactory fog nozzle pressure. For example, a nozzle that gives 50 gpm at 50 lb. solid stream may give approximately 30 gpm of fog at a pressure of 80 to 100 lbs. depending upon the design of the particular nozzle.

A conventional booster line with ¼-in. tip discharging at 50 lbs. gives 13 gallons per minute flow. The friction loss with ¾-in. hose would be about 23 lbs. per 100 ft. or 70 lbs. on the average 300 ft. line, and 115 lbs. with a 500 ft. line. Nozzle pressures and elevation must be added. If the small line is to be operated on an upper floor, 5 lbs. per story should be added just as for larger streams.

A $\frac{3}{16}$-in. tip discharges a little over 7 gpm at 50 lbs. Thus a 300-gallon water tank would last about 40 minutes with the smaller tip. A ¼-in. tip at 50 lbs. would empty the same tank in about 23 minutes. The $\frac{3}{16}$-in. tip discharges 9 gpm at just under 80 lbs. pressure. A slow rate of discharge is chiefly of importance for grass and brush fire fighting where the fire is burning a small amount of fuel at one time. For building fires it is important to be able to apply water fast enough to cool the blaze quickly.

Friction Loss with ¾-in. Rubber Hose

GPM.	F.L. Per 100 Ft.	Nozzle Size-In.	Nozzle Pressure Lbs.	F.L. Per 500 Ft.
5	3.9	3/16	25	18
7	5.4	3/16	47	27
10	13.9	¼	30	69
13	22.8	¼	50	113
15	29.5	¼	68	147

Friction Loss with 1-in. Rubber Hose

GPM.	F.L. Per 100 Ft.	Nozzle Size-In.	Nozzle Pressure Lbs.	F.L. Per 500 Ft.
5	1.0	3/16	25	5
7	1.8	3/16	47	9
10	3.4	¼	30	17
13	5.4	¼	50	27
15	7.3	¼	68	36
20	12.4	5/16	24	62
25	18.8	5/16	37	94

Friction Loss with 1⅛-in. Cotton-Rubber-Lined Fire Hose (Based on Hazen & Williams formula)

GPM.	F.L. Per 100 Ft.	Nozzle Size-In.	Nozzle Pressure Lbs.	F.L. Per 1000 Ft.
5	0.54	3/16	24	5.4
7	1.01	3/16	47	10.1
10	2.0	3/16	95	20.0
10	1.8	¼	30	18.0
13	3.1	¼	50	31
15	4.1	5/16	29	41
20	8.5	5/16	50	85
25	10.6	5/16	37	106
30	14.8	5/16	53	148
35	19.7	5/16	72	—
40	25.2	½	30	—
45	31.3	½	38	—
50	38.1	½	46	—

1½-in. Unlined Fire Hose

GPM.	F.L. Per 100 Ft.	Nozzle Size-In.	Nozzle Pressure Lbs.	F.L. Per 1000 Ft.
10	4.8	¼	30	48
13	7.8	¼	50	78
15	10.1	¼	68	101
20	17.3	5/16	23	173
25	25.4	5/16	37	254
30	36.5	5/16	53	—

1½-in. Cotton-Rubber-Lined Hose

GPM.	F.L. Per 100 Ft.	Nozzle Size-In.	Nozzle Pressure Lbs.	F.L. Per 500 Ft.
20	1.73	5/16	23	9
25	2.62	5/16	27	13
30	3.67	5/16	53	19
40	6.25	½	30	32
50	9.4	½	47	47
80	22.6	5/8	49	113
115	44.0	¾	49	220

Be sure to check to determine whether performance desired is within the characteristic of the pump.

In general, firemen will have little contact with unlined 1½-in. hose. It is not accepted for building fires on the

Continued on page 24

Firemen's Training Developments in 1949

Annual report of the Committee on Firemen's Training
Presented at the NFPA 53rd Annual Meeting, San Francisco, Calif., May 18, 1949
by
W. A. Ross, *Chairman*
Consultant, Public Service Training U. S. Office of Education

THIS has been an encouraging year in firemen's training for the country as a whole. Interest in various phases continued to increase in each region of the country. Many fire department administrators and others responsible for the development of firemen's training took more of an over-all view of training than in previous years. Into total programs designed for local departments, or an entire state, were fitted units which more specifically met the needs of the individuals concerned — whether officers or men.

Examples of important units included in the more complete city training programs were:

1. Company drill schools
2. City training school (including refresher, probationary and advanced classes, as well as special classes)
3. Instructor schools
4. Officer schools
5. Regular senior officer conferences

Many modifications of this setup appeared in small town and village departments operated largely on a volunteer basis.

Examples of important training units included in the more complete state-wide programs were:

1. Training developed and carried on by local departments
2. Itinerant instruction
3. Instructor training courses
4. Officer training courses
5. State and zone fire schools
6. Activities of fire chiefs associations
7. Activities of State firemen's associations
8. Assistance from selected cooperating agencies

The "backbone" of effective training is well-planned, year 'round programs composed of several units, for the state as a whole and for each local fire department. Contrast this situation with the total training being attempted in perhaps only one annual, state-wide activity. Attention is also called to the fact that promotional activities should be clearly distinguished from those which classify under the heading of organized training.

W. A. Ross, Consultant, U. S. Office of Education, a Director of NFPA, presents a report on "Developments in Firemen's Training in 1949" as Chairman of the NFPA Firemen's Training Committee. Richard E. Vernor, presiding.

The trend today in most states is toward measured instruction whether that training is given by itinerant instructors, by a local instructor trained through State sponsored instructor-training courses, or at a central fire station. Instructors from city departments often serve on a part-time basis as instructors in the smaller outlying fire departments.

From figures dealing with measured training programs on a nation-wide basis obtained through the National Fire Protection Association, and also from figures available on the training as carried on by vocational education, it appears that about 40,000 firemen were enrolled for measured instruction during the past 12 months; and it is estimated that another 60,000 at least were enrolled in training carried on in city departments for which no reports were available. In general, state-wide training programs have no direct connection with the training work done in large city fire departments but close working relationships are often maintained.

The NFPA Committee on Firemen's Training is concerned the year 'round with problems involved in all phases of firemen's training. Its primary aim is:

> "To promote effective training of firemen in cooperation with other agencies, and to develop source materials for such training."

Organized in 1941 the Committee has constantly kept before its membership this aim and has moved steadily forward from one goal to another in terms of the controlling purpose. At present there are 29 members from 17 states, the District of Columbia, and Canada.

Our Committee meets regularly twice a year — once at the time and place of the annual National Fire Protection Association meeting, and once in conjunction with the Fire Department Instructors' Conference at Memphis. This plan spaces our two regular meetings approximately 6 months apart, allows time for materials to be prepared and submitted for full Committee action, and makes it possible to maintain satisfactory contact with the entire membership over a twelve-month period.

The work of the Committee is organized in the form of projects to which sub-committees, special and standing committees are assigned. Acting on recommendations coming from without, as well as from within the Committee, new projects are launched from time to time as others are completed. The resources and abilities of members are often supplemented with those of other capable interested persons in various walks of life who are willing to assist in bringing a worthy project to a successful conclusion. All members of the main committee serve on at least one sub-committee each year, and several members serve on more than one.

Pictorial Training Manuals

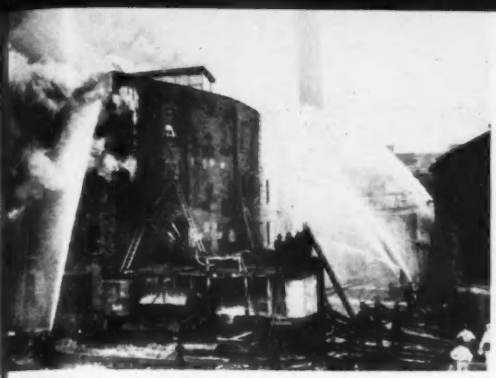
Perhaps the most outstanding accomplishment of the Committee during the year is its part in the preparation of "Handling Ladders — A Pictorial Training Manual," released in March 1949 by the NFPA. Attractively bound in 8½ x 11″ cover it includes 231 large illustrations of step-by-step procedures with ladders. This publication marks a new trend and emphasis in fire training materials because it does pictorially what many words and volumes of printed directions have failed to do in the past. "Handling Ladders" can be characterized briefly by saying it has a maximum of "how-to-do" illustrations accompanied in each instance by a minimum of essential information. It is designed for both the instructor and the learner and is very understandable.

For the first time, then, there is available to the fire service of North America a pictorial manual of ladder evolutions developed cooperatively by representatives of 3 leading fire service organizations — the NFPA, the International Association of Fire Chiefs, and the Fire Department Instructors' Conference. "Handling Ladders" marks the first occasion that these three organizations have joined forces in producing a training manual.

The Joint Committee on Evolutions met again at the University of Maryland the week of April 3rd to develop a similar set of pictures on "Handling Hose, and Salvage." Some 250 pictures were taken and the plan is to make this a companion manual to "Handling Ladders."

Considerable work in the NFPA Committee on Firemen's Training has been

Continued on page 20



Wide World

Wide World

Acme

Fires in the News

Vancouver, Wash. June 24 →
This fire burned the block-long general stores building at the idle Vancouver Shipyard. The building cost $400,000 in 1942.

←Chicago, Ill. July 17
This former Swift & Co. glue plant in the stockyard area was used for storage when fire broke out. Loss estimated: $500,000.

Buffalo, N. Y. June 27 →
Firemen used box cars as a shield against heat at this New York Central Railroad warehouse fire. Loss: $200,000.

←Barberton, Ohio. June 29
Despite previous suspicious fires, Chief E. H. Peery's recommendations for special precautions and protection were ignored prior to an $800,000 fire in this sewer pipe factory protected by an obsolete sprinkler system. When firemen arrived the gates were locked and they were misdirected by the watchman on duty.

→
San Bernadino, Calif. July 17
The main exhibit hall of the annual National Orange Show and containing show props was completely destroyed.

←Silver Spring, Md. July 4
While many volunteer firemen were parading at College Park several miles away, a fire believed incendiary, was touched off in a building supply concern. Four alarms brought numerous fire companies from Montgomery and Prince Georges Counties, Maryland, and the District of Columbia. Loss: $100,000.

→
Staten Island, New York City. June 26
This 5-alarm fire at a Baltimore and Ohio coal loading dock, believed due to smoking by watchman, damaged 2 barges, a warehouse and 3 freight cars, causing $211,250 loss.

←Bangor, Me. July 6
This conflagration believed due to fireworks, burned frame coal pockets and storage sheds for a distance of 1100 ft. along the Penobscot River causing loss estimated at $1,500,000. A group of fuel oil tanks surrounded by a 14 ft. wall was undamaged although fire destroyed structures on three sides.

Rochester, N. Y. June 23 →
Fire believed due to smoking destroyed this large rag and war surplus warehouse with $200,000 loss. Sprinklers were no longer maintained. Baled rags absorbed water causing collapse of walls and damage to three fire trucks including a water tower.

Wide World

Wide World

Acme

International

Ac

Two 1½-in. fog lines supplied by wye from single 2½-in. line connected to high pressure hydrant. Both Elkhart and Rockwood nozzles are shown.

Two 2½-in. fog lines from high pressure hydrant operating at 150 lbs. pressure. Two types of fog nozzles are shown.

Supplying Fog Jets From High Pressure Mains

Third of a series on use of fog by the Detroit Fire Department

THE high value district of the city of Detroit is protected by 14.4 miles of high pressure water mains exclusively for fire protection service. These mains supply 447 high pressure hydrants, each having three 3-in. outlets controlled by independent gates. Water is pumped from the Detroit River by six electrically driven pumps with capacity of 15,150 gpm and capable of developing pressures up to 300 lbs.

In the past, this elaborate high pressure water system has been rather sparingly used, chiefly as a means of providing heavy streams to drown out large fires. Since the advent of Chief Ninnian C. Higby as head of the Detroit Fire Department, extensive use is being made of this high pressure fire main system as a means of first line attack on fires in the area protected by the system.

Chief Higby conceived that the high pressure system was an excellent tool to provide effective pressures for fog streams of various sizes. Accordingly, fog fire fighting techniques illustrated on these pages, have been developed for use in the high pressure district of Detroit.

Common practice is for a high pressure hose truck, or engine companies, responding to first alarms to lay 2½-in. or 3-in. supply lines from the nearest hydrant. These lines may be wyed at the fire to supply several 1½-in. fog nozzles through 1½-in. hose, or 2½-in. fog nozzles may be used direct on the big line. These layouts are shown above. As the high pressure hydrants have gated outlets additional lines from nearby hydrants can be added as needed so that hose lines are usually short providing approximately 100 lbs. nozzle pressure from the initial hydrant pressure of 150 lbs.

Three aerial ladder trucks in the high value district have large capacity fog nozzles for their ladder pipes. Two lines from high pressure hydrants siamesed into the supply hose for a ladder pipe provide a large volume of fog that in many cases has controlled serious fires on upper floors and made possible quick advancement of fog nozzles on hand lines. As many fire fighters know from first hand experience, there is considerable danger in advancing a hand line into an area where heavy solid streams are being used. With large capacity fog

Two 2½-in. lines from high pressure hydrant were siamesed to supply this 2½-in. fog nozzle attached to aerial ladder pipe. The Detroit Fire Dept. has three aerial ladders carrying large fog nozzles for use on ladder pipes where this type of stream is indicated.

High pressure hydrant equipped with Ross pressure reducing valves providing two 2½-in. gated outlets on each 3-in. hydrant outlets. These valves protect the individual hose line against increased pressure in the mains.

Revolving nozzle of cellar distributor type placed on aerial ladder pipe to permit study of fog pattern. Two lines from high pressure hydrant were siamesed giving approximately 500 gpm fog.

nozzles this difficulty is greatly minimized and more effective extinguishment is often obtained, providing that the fire is within effective range of the fog jet.

Detroit fire officials recount a number of threatening fires that were quickly suppressed with fog jets operated from their high pressure system by first alarm companies, where formerly additional alarms would have been required. Excellent results have been observed in fires involving partitions, open cocklofts and other concealed spaces which often cannot be reached effectively with solid streams.

Another interesting by-product of the fog technique, in addition to greatly reduced water losses, has been reported by Captain Roderick Goeriz of the Detroit Arson Squad. In several recent instances firemen have snuffed out fires so quickly and efficiently with fog that complete evidence of the "plants" used to start the fire has been preserved for evidence. This was seldom the case when solid streams were employed. Photographs used in this article were taken by Photographer John Q. Adams of the Detroit Arson Squad.

High pressure hydrant with independent operating nut for each outlet, showing use of reducers to connect 2½-in. hose to 3-in. outlets.

●

Correction

Our attention has been called to an error regarding the cooling effect of water as published in the article "Detroit Uses Fog," page 20, July 1949 FIREMEN. To raise the temperature of a gallon of water from 50° F. to 212° F. and convert to steam requires approximately 9407 BTU. Thus 58 gpm completely utilized would absorb 545,606 BTU. Assuming that ordinary combustibles gave off 8000 BTU per lb., the 58 gpm would absorb the heat from 68 lbs. of combustibles completely burned in one minute. This is in addition to the smothering and blast effects of the fog jets.

From Hangings to Fire Fighting

MANY years ago, in 1862 to be exact, the Mills County (Iowa) Protective Association was organized to catch horse thieves who made the mistake of riding off on horses without bothering with little details such as first acquiring ownership.

Time and progress, through the advent of motorized transportation, decreased the need for the Protective Association, so it became inactive. One day fire chief Forrest Chantry of Malvern, Iowa, was visiting with the local banker about the need for fire protection in the territory around Malvern. The subject of money brought to light the fact that the old Mills County Protective Association still had about $750 in the bank, with no further occasion for its use.

Chief Chantry arranged a meeting of all the surviving members of the horse thief catching organization and explained a plan to change the mission of that organization so the money could be used to start a fund for a rural fire truck. This received the O.K. of all the survivors and the Mills County Protective Association now is instrumental in protecting against loss by fire.

The truck has a 350-gallon tank for rural fires. The hose bed is so arranged that the 1½-in. hose is loaded under seats permitting the men to ride inside. There is also a cable on a drum in the rear space usually used for a booster reel. This enables the truck to snake machinery or other items out of burning equipment sheds or barns.

—from Iowa State College Bulletin, Fire Service Information

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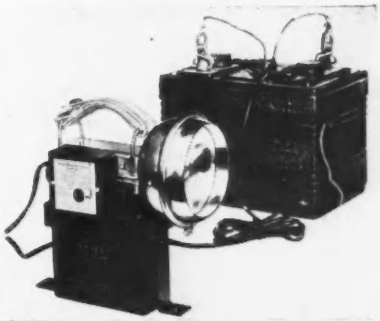

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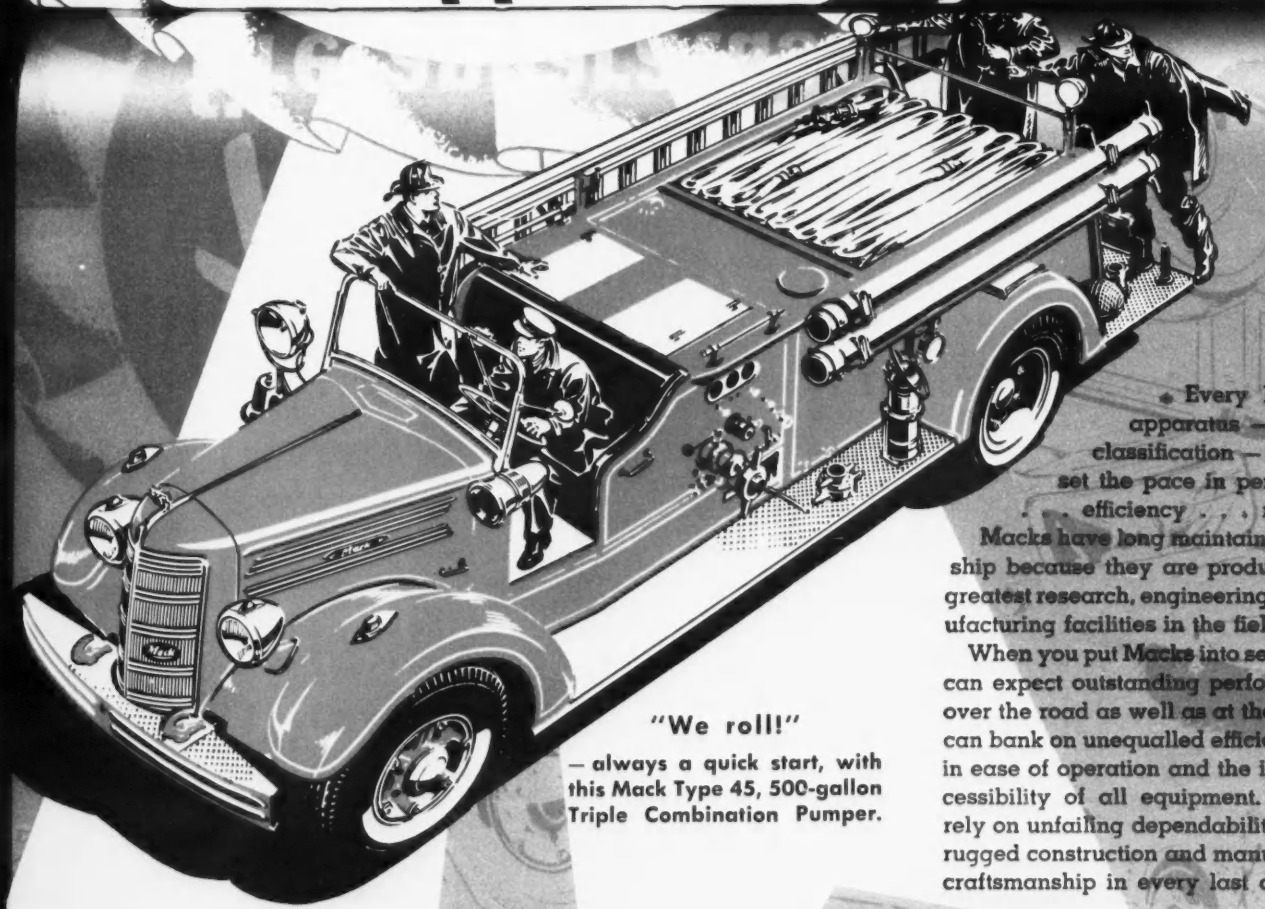

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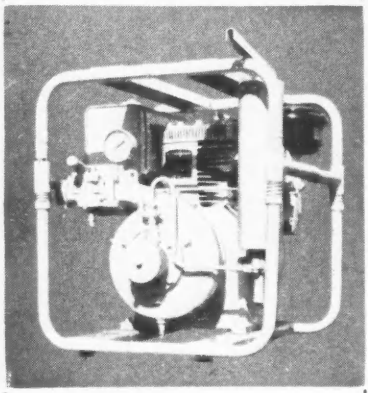
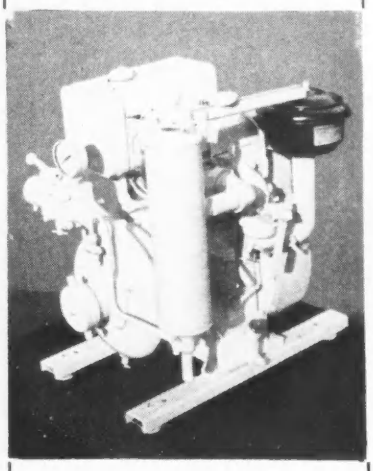


Above—FZZ Mounted in Carrying Frame.

Pumping Solid Stream and Fog.



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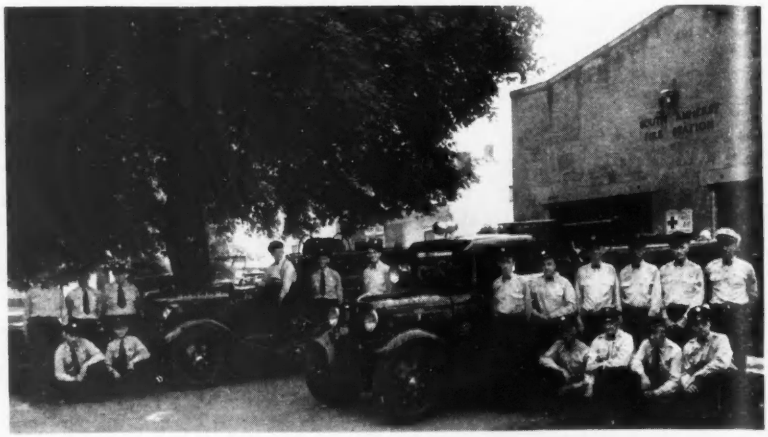
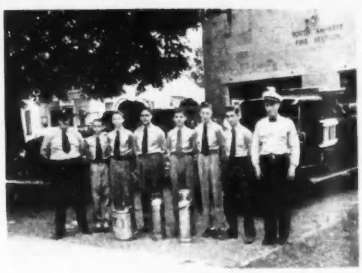
MEMBER FIRE DEPARTMENTS

South Amherst Volunteer Fire Department

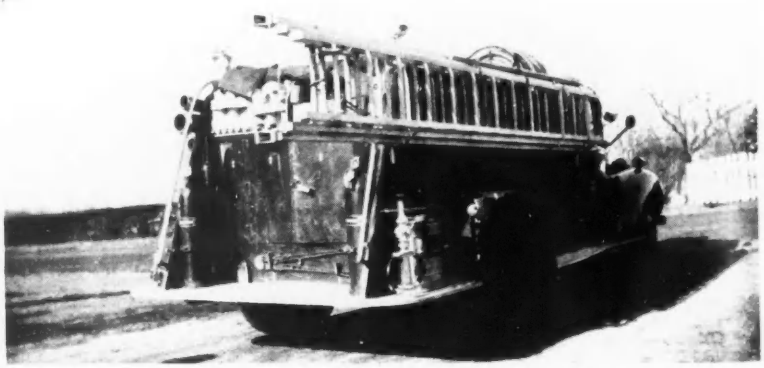


MEMBERS of the South Amherst, Ohio, Volunteer Fire Department are justly proud of their No. 2 truck, a 500 gpm pumper which they built themselves. It carries a 250-gallon booster tank, 600 feet of 2½-in. hose and 600 feet of 1½-in. hose. It is considered ideal for country fires and is capable of pumping while being driven. The No. 1 truck, also a 500 gpm pumper, carries a 250-gallon booster tank, 1000 feet of 2½-in. hose and 600 feet of 1½-in. hose. The South Amherst Fire Department, in addition to its own village, protects an area of seven square miles outside the village limits in the townships of Amherst and Russia, Ohio.



Six of the thirteen Junior Firemen are shown at right with the Fire Chief, J. J. Wilhelm and one of the regular firemen. These future firemen, ranging in age from 12 to 18 years have been a great aid to the fire department in combating grass fires and laying and picking up hose at fires. They are also trained in first aid and the use of fire extinguishers.

Richville, Ohio, Fire Department



IN February of 1948, the community of Richville, Ohio, a town of some 200 homes, desired a fire department. Chief Raymond Earle of Massilon (member NFPA) was assigned to set up and train the forty interested men who volunteered. After ten weeks of intensive training they had the necessary basic knowledge for fighting fires.

A business club was organized to raise funds to buy apparatus. Mr. A. Nickles, operator of the Nickles Bakery Company, who had donated a truck to the Navaree, Ohio, Fire Department (see FIREMEN for May 1949, page 20), made a gift of a truck chassis and the firemen working nights and Sundays built a 500 gpm front mount pumper at the cost of approximately one thousand dollars.

At the present time they also have one paneled service truck and are negotiating for the purchase of a large tank truck.

This past spring another training course was conducted for new members.

Fire Book Review

Firehall, 294 pp. $3.50, published in July by Bruce Humphries, Inc., Boston, is perhaps the first good novel directly centered around life in a volunteer fire department. It is written by J. Adin Mann, a volunteer fireman of Devils Lake, N. D. (member NFPA Volunteer Fire Company Section).

The story takes the reader through a busy calendar year in what is doubtless intended to be typical of volunteer fire department life. Fireman Mann has tapped a source of human activity in small towns that has been largely overlooked by other writers.

The serious side of the volunteer fire business, as related, includes at least four working fires, at one of which a volunteer fireman is killed, struggles for appropriations, deficiencies in equipment and water supply, dealings with the underwriters. The service of volunteer firemen in emergency and first aid work is also chronicled.

Each fireman who reads the story will doubtless measure *Firehall* against his own department and experience. He will also inevitably look for errors in fire fighting details such as "placing a nozzle on a female coupling" on page 75 (no adapters mentioned), or on page 82 "that pump is only giving us about 300 lbs. pressure," whereas Class A pumps are only rated at 150 lbs.

Mann has succeeded in making his volunteer firemen characters remarkably real and alive, undoubtedly because he avoids any pretense that they are "tin gods" and points out the human foibles of each character in the story, male and female. The social side of the volunteer fire company life includes accounts of banquets, outings and a state firemen's convention. Four fire company members are married before the book ends.

Some readers may object that the amount of whiskey consumed by the characters in *Firehall* is more typical of bygone days and be apprehensive lest the story give the volunteer fire service a black eye in the minds of many readers. To this we must observe that Fireman Mann calls the shots as he sees them and his story largely centers about the celebrations of red letter days on the volunteer fire department calendar. It necessarily overlooks the 340 odd days when life in the firehall is dull or routine. The good and the bad in the story is pretty well balanced. An aggressive chaplain apparently is intended to contrast the waywardness of the indifferent and reckless.

Every one of the 750,000 volunteer firemen of the United States and Canada, plus their families and friends, should find it stimulating reading. A good buy for the fire company library!

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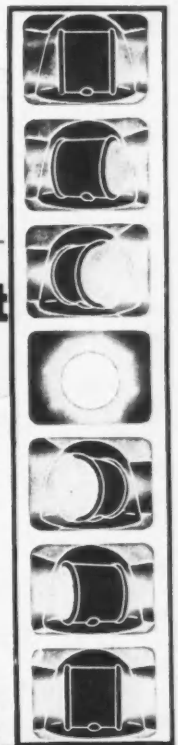

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SOMERVILLE, MASS.

Volunteer Fire Company Section

Membership in the NFPA Volunteer Fire Company Section costs $12.50 per year. This includes 10 subscriptions to FIREMEN. Additional fire fighters may be enrolled to receive FIREMEN at $1.25 each. Other NFPA members will be sent FIREMEN on request.

AT the present time there are 1,325 member companies in the Volunteer Fire Company Section of the National Fire Protection Association, having 20,796 men receiving FIREMEN.

New members of the Section for this month are:

Beecher District Fire Dept., Flint, Mich.
Brooksville Vol. Fire Dept., Cape Rosier, Me.
Dallas Fire Dept., Dallas, Ore.
DePoe Bay Vol. Fire Dept., Depoe, Ore.
Dr. Henry M. Laing Fire Co., Dallas, Pa.
Gerry Vol. Fire Dept., Gerry, N. Y.
Glenside Fire Co. No. 1, Glenside, Pa.
Glenview Vol. Fire Co., Glenview, Ill.
Hazardville Vol. Fire Dept., Hazardville, Conn.
Holland Twp. Fire Station No. 2, Holland, Mich.
Loomis Vol. Fire Dept., Loomis, Calif.
Osceola Vol. Fire Dept., Osceola, Ind.
Sicomac Engine Co. No. 3, Wyckoff, N. J.
Superior Vol. Fire Co., Superior, Ariz.
Sylvania Twp. Fire Dept., No. 1, Sylvania, Ohio
The Youbou Sub Division Vol. Fire Brigade, Youbou, B. C.

VOLUNTEER FIRE COMPANY SECTION MEMBERSHIP

($12.50 annual dues) Eligible:

(1) all bona fide volunteer fire organizations in the community.

(2) all fire departments and companies in communities of less than 25,000 population.

(3) all industrial fire brigades.

Member companies receive ten copies of FIREMEN magazine each month, mailed to the homes of individual firemen. Beyond the ten, additional copies of FIREMEN cost $1.25 per year.

Volunteer Fire Company Section members receive at their headquarters, one copy of all publications sent to NFPA individual associate members.

INDIVIDUAL ASSOCIATE MEMBERSHIP

($12.50 annual dues) Eligible:

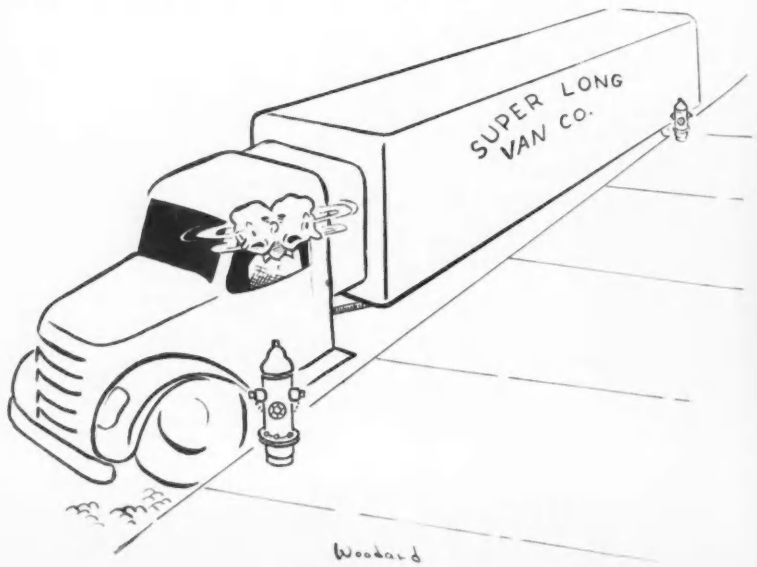
Individual fire departments, officers, firemen, and others interested in fire safety. NFPA associate members in the fire service receive: one copy of FIREMEN magazine monthly, the NFPA Quarterly, the monthly Fire News, technical standards, popular bulletins and posters.

All associate members have one vote in Association affairs.

Fire Chief Position Available in Winnetka, Ill.

Due to the resignation of Chief M. J. Dalton to enter private business, the Village of Winnetka, Illinois (member NFPA), is without a fire chief. The best possible man is being sought, without regard for geographical restrictions, to fill this vacancy.

Winnetka is a non-political, residential suburb of Chicago with a population of 12,500, covering an area of 3.5 square miles. It is governed by the council-manager plan. Apply for further details to the Personnel Officer, Village Hall, Winnetka, Illinois.



Fire School Dates

Florida. State Firemen's Fire College and Convention, Idaho Springs, Aug. 25–27.

Indiana. Sixteenth Annual State Fire School, Purdue University, Lafayette, Sept. 27–30.

Kansas. 1949 State Fire School, Wichita, Oct. 24–27.

Maryland. Annual Short Course, College Park, Sept. 6–9.

Missouri. Southwest Missouri Annual School, Springfield, Oct. 18–19.

Montana. Tenth Annual State Firemen's School, Polson, Sept. 7–10.

Ohio. State Fire School, Fifth Short Course in Fire Administration, Ohio State University, Columbus, Sept. 6–9.

Tennessee. Sixth Annual State Fire School, Nashville, Sept. 5–9.

Supervised Training Available for Wisconsin's Smaller Departments

THE volunteer fire department of Oregon, Wis., has for many years desired supervised training. A recently passed Wisconsin state law now permits vocational schools to give instructions outside their district limits. The Oregon Fire Department (member NFPA) has taken advantage of this and has just completed a twenty-hour basic course given by an officer of the Madison, Wis., Fire Department, under the supervision of the Madison Vocational School.

The vocational school selects both the texts used (in this case the Oklahoma A & M "Fire Training Practices"), and the instructor.

Requirement for a certificate is attendance at 80 per cent of the sessions. There are no examinations.

Cost of this training program is shouldered for the most part by the Federal and State Vocational School funds, the local funds contributing about one-third of the cost.

•

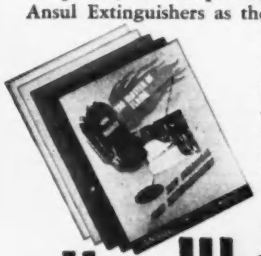
Chief Peter Loftus of the New York City Fire Department, in company with Mrs. Loftus and their daughter, are pictured aboard the White Star Liner *Britannic*, before sailing from New York to Cobh, Ireland, recently. Chief Loftus left on a two months combined vacation and inspection tour. He will make a study of fire fighting equipment and methods in Ireland and England.

FIRE EXTINGUISHERS ARE YOUR *BEST* PROTECTION

...and most economical, too! Tests conducted by impartial, nationally recognized approval laboratories have proved the superiority of Ansul Dry Chemical Fire Extinguishers on *Flammable Liquid Fires.*

In addition, Ansul Fire Extinguishers provide greater safety for the operator. The stream of Ansul Dry Chemical forms a protective screen safeguarding him against radiant heat.

More and more industrial plants, transportation companies, oil companies, etc. are switching to Ansul Extinguishers as their first line of fire defense. There is a reason.



Get the facts. Send for your copy of File No. 405. You'll also receive our latest literature together with comparative rating charts for the various types of fire extinguishers.

- Safe for use on electrical fires, too! Even high voltages are not conducted by dry chemical stream.
- Can be recharged at scene of fire furnishing continuing protection.
- Annual recharging is not necessary. Low maintenance costs.
- Longer range stream of dry chemical is effective in winds and drafts.
- Ansul Dry Chemical is non-abrasive, non-corrosive, non-toxic.
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Simple, *obvious* operation makes the Randolph really panic-proof—gets it into action *before* the fire spreads—kills fire instantly with a snowy cloud of CO_2! No valves to turn, no nozzles to adjust; just point and press your thumb! Randolph CO_2 is non-damaging, evaporates without a trace. It's non-toxic, won't conduct electricity, deteriorate or freeze.

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Learn how Randolph gives your plant better *preventative* fire protection! Write or wire:

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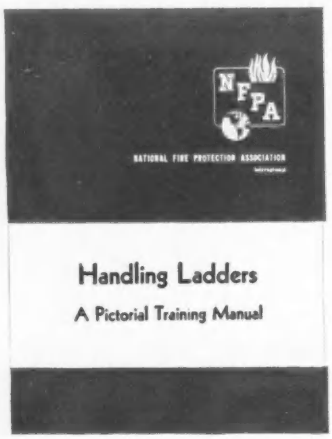
"Handling Ladders" First Manual of Joint Committee on Evolutions



Published by the National Fire Protection Association

★

Approved by:

NFPA Committee on Firemen's Training

International Association of Fire Chiefs

Fire Department Instructors Conference

The Joint Committee on Evolutions first manual, "Handling Ladders" contains some 231 large photographs in its 120 pages. It is available from the NFPA executive office, 60 Batterymarch St., Boston, Mass., for $1.50 per single copy or $1.00 per copy in quantities of 10 or more.

Continued from page 10

done in developing *A Guide for Training Pump Operators*. The first draft for such a publication has been completed. Further development and refinement is in process on the basis of the actual jobs pumpmen must do. The demand for such a guide seems to be quite general among those engaged in fire training work. The manner of organization of subject matter is a unique feature.

Another Committee project of general interest deals with the preparation of training materials on the subject the individual fireman's responsibility for public relations. The idea here is to provide source materials with which an instructor can organize course work, or weave into existing courses some practical assistance on public relations from the standpoint of the responsibility of each man who represents the fire service. The completed publication is being set up on a self-instruction basis so that any fireman, encouraged to read it by his superior officers, will gain much in the way of individual help. Results should be reflected in improved public relations for the entire fire service. We all know that in the final analysis the success or failure of public relations depends on what the individual fireman does, both on and off duty.

Although opinion has been somewhat divided on a project, the fireman and electricity, it has been agreed in the Committee on Fireman's Training that there is a great need for more instructional material which will provide basic information regarding electricity, and which will emphasize hazards to life and limb of the firemen who encounter electricity in fire fighting. Due to the fact that the State Board for Vocational Education in Michigan has done such an excellent job in developing their publication on this subject, our completed publication will supplement rather than duplicate the source material already available.

As many of you know the first publication prepared and sponsored by the NFPA Committee on Firemen's Training was the *Industrial Fire Brigades Manual*. You will be interested to know that over 30,000 copies of this publication have gone out, and that we are now preparing to revise it. It is also heartening to note the continued demand for two other publications titled: *The Individual Fireman's Responsibility in Arson Detection* and *A Reference List for Firemen's Training*. Revisions of these publications are planned as the need becomes evident.

The advisability of undertaking the development of source materials for instruction in connection with aerial ladders, driver training (for those handling apparatus), mutual aid and

Continued on page 22

ADT BURGLAR ALARM SERVICE
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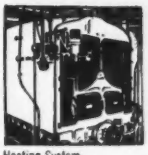

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Available through ADT Central Stations in principal cities; elsewhere as local systems, or directly connected to police and fire departments. ADT will gladly review your protection arrangements without cost or obligation. Write for descriptive literature.

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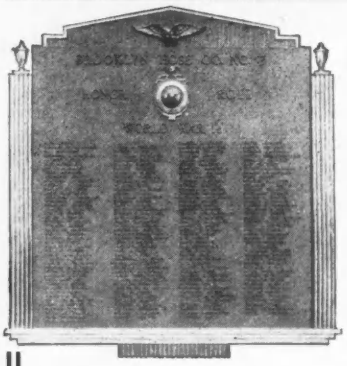

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SEE PAGE 20

Randolph FIRE FIGHTING EQUIPMENT

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Continued from page 20

multiple company operations will be discussed at our January 1950 meeting in Memphis.

Officer Training

Our Committee has given considerable attention to officer training. In fact we are in the process of preparing and distributing an outline for officer training which we hope will be suggestive and helpful to states and local fire departments. As all of you know, the scope of most early efforts along officer training lines was very limited and consisted almost wholly of advanced operational training. In the beginning, also, officer training was largely conceived of as something for company officers in city departments. A change in this original conception is not only responsible for broadening the base upon which this kind of training is now built but extending the opportunity for such training to both line and senior officers. It is also responsible for the requests to provide both paid and volunteer departments with training fashioned expressly for those who direct the work of others.

The greatest single mark of progress in officer training is the awareness of the need for training in many departments from coast to coast. True, those in authority are often unfamiliar with just how to go about meeting that need but are certainly looking for help and guidance.

After so much attention has been given over a period of years to operational training for the rank and file, the tendency today seems to be to start with the individual officer's needs and fill in "gaps" that may exist in his skills and knowledge by means of appropriate, organized instruction. Instead of a narrow list of advanced operational subjects, the scope now includes a variety of subjects under several classifications. The fact is the scope of officer training is as wide now as it formerly was narrow.

Spearheading the development in a vast majority of instances is leadership training for officers. Once on its way, a class, course, school or conference for fire officers opened up with the attention centered on improving individual leadership ability gets a sympathetic ear regardless of any previous misgivings on the part of the officers concerned. Discussed and presented under this broad division are found such typical subjects as these:

1. Duties and responsibilities of officers
2. The essentials of good leadership
3. Leading different types of men
4. Directing the work of others
5. Maintaining discipline
6. Self analysis and self improvement
7. Making a good personal appearance
8. Taking part in a meeting
9. Speaking in public
10. Getting along with others — personnel, departmental and public relations
11. Maintaining morale
12. Keeping mentally and physically fit

These represent just a few of the phases falling under this leadership heading, but from the cross section of officer training subjects over the country as a whole the interest appears to be exceedingly keen in (1) public speaking, (2) public relations, (3) self analysis, and (4) the handling of men. I have yet to hear of an officer class being poorly received where early emphasis is on these things.

Under a second main classification which might be called the business side of firemanship, we find other subjects which are the "barometers" of thinking up and down the line. It is here we find such subjects as:

1. Making reports
2. Keeping records and accounts
3. Inspections and building codes
4. Municipal water supplies
5. Fire laws and ordnances
6. Fire Department budgeting and finance
7. Problems of administration and supervision

Small wonder that when company officers are provided with an opportunity to learn more about such things that fewer difficulties are experienced in filling vacancies occurring up the line.

The third classification deals with technical subjects. There is a wide variation in subject matter. Typical, however, are such items as:

1. Advanced hydraulics
2. Ventilation and toxic gases
3. Signals and communications
4. Arson detection
5. Plastics and other new materials
6. Fire prevention
7. Fire tactics

In this connection, departments seem to be making an attempt to keep their officers up to date or refreshed on pertinent subjects involving in some instances considerable technical knowledge and skill.

Instructor Training

You will not be surprised at the fourth subject category for officer training. It is none other than instructor training which is also being used as an "opener." Wherever officers have definite responsibility for the instruction and training of men, this medium of improving them as instructors is the frequent means of stimulating interest in further training, instilling confidence, and creating an "appetite" for the other types of officer training.

There are various instances where officers have not been quite ready for technical subjects in officer training, but they got their introduction to and "taste" for in-service training by having an opportunity to participate in a class or school for instructors. They went

into other training more whole-heartedly through the "gate" of instructor training.

If you ask me what subjects to include in an officer school for your particular department, I can only reply by asking what are the duties and responsibilities of your officers? Analyze them in terms of actual jobs. List them carefully and then check each of your officers against this list. Where are the gaps? Who needs what in the way of training?

If you ask me how long the training school or conference needs to be, I must again go back to the total needs of all of the officers concerned. Conferences and schools of 20–30 hours are common. Some are shorter; many are longer. And, of course, one officer course doesn't do the whole job because officers do not stay trained any more than the rank and file men stay trained. Once started, officer training needs to be continued at intervals.

Because one department includes certain subjects in its program doesn't mean these are necessarily the subjects for your men. They may or may not be. It depends on such factors as background and the specific needs — both immediate and long-time — of your particular group of officers.

Volunteer Officer Training

Volunteer departments are more limited in numbers of officers needing training and opportunities to train, but the need exists in both paid and volunteer departments. It is surprising how many officers want officer training, whether paid or volunteer. There is no complete, hard and fast list of subjects for officer training. Each department has its own peculiarities and situations. However, as indicated there are certain subjects which appear to be appropriate in nearly any officer school or conference.

It is as logical and necessary to "sift out" and analyze appropriate subjects on the basis of the duties and responsibilities of fire officers as it is to "sift out" and analyze subjects for training rank and file men based on what these men do. Officers are as clearly entitled to a "break" in getting training as are the men they direct and command. The two kinds of training go hand in hand for successful fire extinguishment. There is nothing mystical about the planning, conducting or follow-up on officer training. We must turn first to the individual officer, what he has to do and know, how well he performs now, and what will help him most to become a better officer.

During the year each Committee member appears on various fire programs in the interest of promoting effective fire training. Such meetings were regional, state, sectional and local in scope. Members are unstinting with their time, effort and talent.

THE ONLY TWO STAGE PUMP WITH 3 OPERATING CHARACTERISTICS

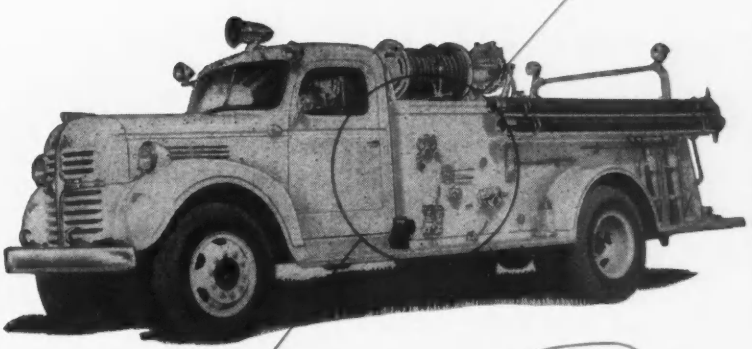
Barton-American
DUPLEX MULTI-STAGE
Centrifugal Fire Pump

Two independent pumps driven by individual gear trains —breakdown of one still leaves one in operation — makes possible three operating characteristics.

1. Large capacities at normal pressures delivered through the capacity pump only.

2. Normal high pressures delivered through the high pressure pump only.

3. Pressures as high as 400 pounds are delivered with both pumps operating in series and at LOW engine speed.



The Barton-American Duplex-Multistage is the ONLY fire pump that has three distinct and separate operating characteristics, yet has only TWO impellers.

Positive one point lubrication. Ball bearings and gears are all located in pump transmission case, using same grade of oil as truck engine. No grease cups to be overlooked — no water lubricated bearings to run dry and fail.

Delivers 400 pounds pressure for fog gun service.

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A superior one-piece aluminum helmet in "regulation" style; light, strong, durable, will not shrink or lose its shape.

THE "FLINTFLEX" ↓
The most rugged and durable plastic helmet on the market; "regulation" style with standard front.

We offer a PERSONAL SERVICE to firemen, giving special attention to individual needs or preferences as to unusual sizes and shapes, special front pieces, etc.

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SALESMEN WANTED

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AMERICAN-La France-Foamite Corp., of Elmira, N. Y., has announced a new tinning process which is expected to double the life expectancy of their Alfco Fire-Gun (vaporizing liquid, pump type) Extinguisher, by protection against internal corrosion. Chemical acids may be formed in extinguishers if moisture enters the unit, and the presence of disimiliar materials lends itself to an electrolytic action which leaches the zinc out of exposed brass surfaces. Tin plating eliminates both forms of corrosion, tin being resistant to acid attack, minimizing the danger from internal chemical reactions. This process has been inspected and approved by both the Underwriters' and Factory Mutual Laboratories.

Fully illustrated free literature on this new extinguisher is available from the company upon request.

Carpenter Announces New Light

A NEW automatic emergency light has been developed by the Carpenter Manufacturing Co., Master-Light Bldg., Boston 45, Somerville, Mass. Named the "All-in-Head" this light is said to be able to adequately illuminate a 60 ft. x 60 ft. for emergency purposes. Connected to the light circuit, the unit automatically operates when the circuit power fails.

Using Small Hose

Continued from page 9

North American continent (except for small first aid hose on standpipes) as it is less efficient as a water carrier than 1-in. cotton rubber lined hose. It is slower to get into operation because of the time required for wetting the fabric and charging the line. However, rural fire fighters may be interested to know something about the performance of this hose in the event they are called upon to assist at forest fires where such hose is being used. The high friction loss of unlined hose must be offset by using small nozzles and small flows. For example, by using a ¼-in. tip on the unlined 1½-in. hose instead of a ½-in. or larger tip. With the ¼-in tip the friction loss with 13 gpm flow from a 50-lb. nozzle pressure would be about 17 lbs. per 1000 ft. With a ⅜-in. tip at 50 lbs. the friction loss per 1000 ft. would be about 75 lbs. The low friction loss may be important where small portable pumps must be employed to supply long lines often at a considerable elevation.

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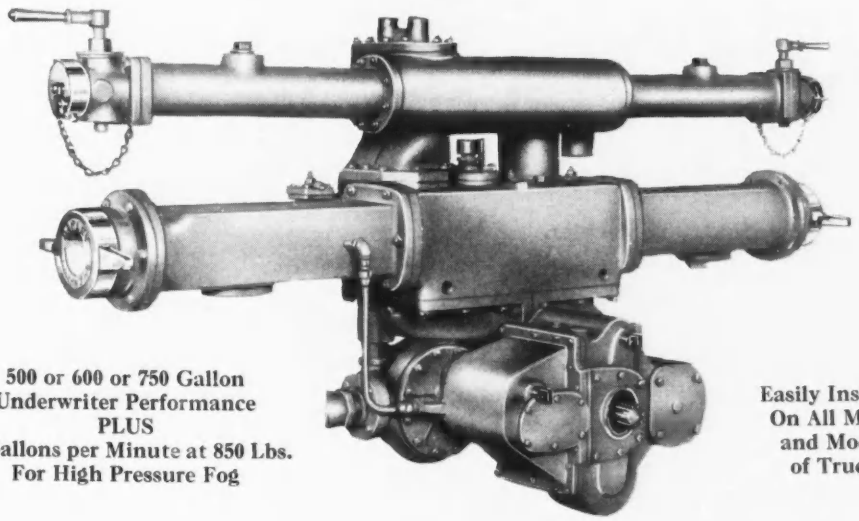

500 or 600 or 750 Gallon Underwriter Performance PLUS 60 Gallons per Minute at 850 Lbs. For High Pressure Fog

Easily Installed On All Makes and Models of Trucks

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POWERED BY 140-HORSEPOWER ENGINE

OUTPUT FROM THIRD STAGE

VOLUME	PRESSURE	ENGINE SPEED
190 G.P.M.	500 Pounds	2240 R.P.M.
157 G.P.M.	600 Pounds	2350 R.P.M.
125 G.P.M.	700 Pounds	2530 R.P.M.
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OUTPUT WITH FIRST AND SECOND STAGES IN PARALLEL AND OPERATING SIMULTANEOUSLY WITH THE THIRD STAGE

VOLUME	PRESSURE	ENGINE SPEED
65 G.P.M. (from third stage)	500 Pounds	2370 R.P.M.
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A cylinder-type breathing apparatus employing either oxygen or compressed air for ½-hour respiratory protection

This simple, easy to use Demand Mask supplies oxygen (or air) for the fireman in dangerous atmospheres according to his breathing demands, making him independent of outside air. Utilizing the M.S.A. Demand Regulator, the Mask's operation is automatic—a turn of a valve to start is all that is required. Non-fogging facepiece, comfortable light-metal carrying frame and padded leather harness are special, appreciated features. *Write for Bulletin B-16.*

M-S-A All-Service® Gas Mask

Protects against poisonous gases, vapors and smokes, wherever oxygen in air is sufficient for safety

The famous M.S.A. All-Service Gas Mask is known and used throughout America. Light, easy to put on and wear, this all-around Mask protects against every commonly-encountered breathing hazard (including carbon monoxide) except oxygen deficiency. The "All-Vision" Facepiece again made of flexible natural rubber affords wide-angle seeing with comfortable seal on the face—long-lasting canisters are quickly replaceable. *Send for Bulletin EA-8.*

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Fog-free lenses—no moving parts—no high pressure valves or fittings—easy to maintain—simple to use.

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At Your Service:

54 BRANCH OFFICES IN THE UNITED STATES AND CANADA

America's favorite Fire Fighters are

INDIAN FIRE PUMPS!

The many different uses for **INDIAN FIRE PUMPS** is what appeals to fire departments. They say "they are the best equipment on the trucks."

Ask a fireman or forester who has used **INDIANS** and he will tell you they are the best hand tank made for his work and he wouldn't be without them

Farm fires in fields, livestock barns, poultry houses, etc. are quickly controlled with **INDIAN FIRE PUMPS.**

INDIAN FIRE PUMPS are known and praised from Maine to California Thousands of them in towns, cities, farms, factories, in wooded areas, forests and resorts stand guard against fire When the emergency comes they go into action with lightning speed and quickly bring the flames under control

Big 5 gal. tanks hold enough water to take care of the average fire without refilling. Furnished with solid brass or chrome plated tanks which are very popular, also Armco zinc grip steel tanks coated inside with asphaltic base paint. Do you have plenty of **INDIAN FIRE PUMPS** on hand? Now is the time to order. Catalog on request.

D. B. SMITH & CO.

Put the **INDIAN** Sign on Every Fire!

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